KY Valid Course List

HOW TO USE THIS DOCUMENT

This document contains a listing of course descriptions and parameters along with certifications that fit the parameters for a given course. The grade range and population information listed for each course are not absolute. Please choose the course that most closely represents the students in a given course.

EXAMPLE

John Q Middle School had 5th, 6th, and 7th grade students taking a Creative Art course. This course would be linked to course number **500711: Creative Art – Comprehensive**, which shows with a recommended grade range of 6th – 12th.

The courses listed in this document are not meant to replace the course titles and course numbers already in use at the school level. Schools will link their courses in the STI Valid Course List to courses listed in this document.

Schools may have created courses that are very unique in order to meet students' needs. If a course does not meet the definition or content of one contained in this document, please use course number **909999: School Defined Course**, and code the correct content through the LEAD report.

CERTIFICATIONS

It is important to note that the certificates listed are the ones that fit *ALL* of the parameters for a specific course – there may be other certificates that can teach it with slightly more restrictive parameters.

It is very important to note that not all of the certificates listed under a specific course will meet the Highly Qualified Teacher standards as defined by The No Child Left Behind Act of 2001. Please refer to the Highly Qualified guidance documents located on the Education Professional Standards Board (EPSB) website at http://www.kyepsb.net/nclb.asp.

In addition to Highly Qualified considerations, please take note of the following information from ***The Program of Studies for Kentucky Schools Primary-12*** with regard to middle school courses that are offered for high school credit.

High School Credit Earned in Middle School

It is expected that most students will earn these credits during their high school years. However, local school districts may offer these courses to middle level students if the following criteria are met:

- the content and the rigor of the course is the same as established in the *Program of Studies*
- the students demonstrate mastery of the middle level content as specified in the *Program of Studies*
- the district has criteria in place to make reasonable determination that the middle level student is capable of success in the high school course
- **the middle level course is taught by teachers with either secondary or middle level certification with appropriate content specialization**

Although middle level courses list the Provisional and Standard Elementary Certificates, Grades 1-8 as allowable under the parameters of these courses, they will not meet the above requirements for courses that are offered for high school credit.

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Please contact Robin Chandler in KDE's Division of Curriculum at 502-564-2106 with any questions on content and curricula.

Please contact EPSB's Division of Certification at 502-564-4606 with any questions on credentials or permissions.

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Technology Education
(210000)

The Technology Education program is a study of technology, innovation, design, and engineering, which provides an opportunity for students to learn about the processes and knowledge related to technology that are needed to solve problems and extend human capabilities.

Technology Education - General (210100)

Career Major - The Technology Education program is a study of technology, innovation, design, and engineering, which provides an opportunity for students to learn about the processes and knowledge related to technology that are needed to solve problems and extend human capabilities. Any course not found under this career major/sub code may be found in another career major/sub code within this program area.

210101 - Technology Inventions and Impacts, Grades 6-8

Grade Level: 6 - 8
Credits: 0
Description: Students will investigate how commercially produced inventions/innovations impact us on a personal, social, economic, and environmental level. Using tools, machines, materials, and processes students will participate in engineering design activities to understand how criteria, constraints, and processes affect inventions. Brainstorming, visualizing, modeling, constructing, testing, and refining designs provide first-hand opportunities for students to understand the uses and impacts of inventions; past, present, and future. Students will develop skills in communicating design information and reporting results. This can be accomplished in a laboratory environment through a variety of instructional strategies. Instruction can be enriched through participation in Kentucky Technology Student Association challenges. This course may be 6 to 18 weeks in duration.
Content: Technology Education (CTE)
Population: General

210102 - Technology Inventions and Impacts, Grade 9

Grade Level: 9 - 9
Credits: 1/2
Description: Students will investigate how commercially produced inventions/innovations impact us on a personal, social, economic, and environmental level. Using tools, machines, materials, and processes students will participate in engineering design activities to understand how criteria, constraints, and processes affect inventions. Brainstorming, visualizing, modeling, constructing, testing, and refining designs provide first-hand opportunities for students to understand the uses and impacts of inventions; past, present, and future. Students will develop skills in communicating design information and reporting results. This can be accomplished in a laboratory environment through a variety of instructional strategies. Instruction can be enriched through participation in Kentucky Technology Student Association challenges. This course may be 6 to 18 weeks in duration.
Content: Technology Education (CTE)
Population: General

210103 - Technology Systems, Grades 6-8

Grade Level: 6 - 8
Credits: 0
Description: This course contains units of study addressing content and processes associated with technological systems and their various relationships. Students apply systems concepts to design and problem-solving activities related to Energy and Power, Information and Communication, Transportation, Manufacturing, Construction, Medical, Agriculture and Bio-Related Technologies. Laboratory activities engage students in using, managing, assessing, and understanding technology. This can be accomplished in a laboratory environment

through a variety of instructional strategies. Instruction can be enriched through participation in Kentucky Technology Student Association challenges. This course may be 6 to 18 weeks in duration.
Content: Technology Education (CTE)
Population: General

210104 - Technology Systems, Grade 9

Grade Level: 9 - 9
Credits: 1/2
Description: This course contains units of study addressing content and processes associated with technological systems and their various relationships. Students apply systems concepts to design and problem-solving activities related to Energy and Power, Information and Communication, Transportation, Manufacturing, Construction, Medical, Agriculture and Bio-Related Technologies. Laboratory activities engage students in using, managing, assessing, and understanding technology. This can be accomplished in a laboratory environment through a variety of instructional strategies. Instruction can be enriched through participation in Kentucky Technology Student Association challenges. This course may be 6 to 18 weeks in duration.
Content: Technology Education (CTE)
Population: General

210105 - Special Technology Topics, Grades 6-8

Grade Level: 6 - 8
Credits: 0
Description: Special Technology Topics allows the teacher to develop a course for in-depth exploration of technological topics. This course will allow students to gain a more comprehensive knowledge of a particular technology topic or explore specialized technology careers. This can be accomplished in a laboratory environment through a variety of instructional strategies. Instruction can be enriched through participation in Kentucky Technology Student Association challenges and/or Project Lead the Way-Gateway to Technology program materials. This optional/additional course may be 6 to 18 weeks in duration and may be taught at any grade level as appropriate.
Content: Technology Education (CTE)
Population: General

210106 - Special Technology Topics, Grade 9

Grade Level: 9 - 9
Credits: 1/2-1
Description: Special Technology Topics allows the teacher to develop a course for in-depth exploration of technological topics. This course will allow students to gain a more comprehensive knowledge of a particular technology topic or explore specialized technology careers. This can be accomplished in a laboratory environment through a variety of instructional strategies. Instruction can be enriched through participation in Kentucky Technology Student Association challenges and/or Project Lead the Way-Gateway to Technology program materials. This optional/additional course may be 6 to 18 weeks in duration and may be taught at any grade level as appropriate.
Content: Technology Education (CTE)
Population: General

210107 - Technology Concepts

Grade Level: 9 - 12
Credits: 1
Description: This introductory course provides opportunities for students to study and apply technological

systems, concepts, and processes. Group and individual activities engage students in creating ideas, developing innovations, and implementing design solutions utilizing the seven contexts of technological literacy (medical, agriculture and bio-related technologies, construction, manufacturing, transportation, power and energy, and communication systems). Technology content, resources, and laboratory activities encourage student applications of Kentucky Core Content. This can be accomplished through modular or other instructional strategies. Instruction should be enriched through participation in Kentucky Technology Student Association challenges. This course may be 18 or 36 weeks in duration.
Content: Technology Education (CTE)
Population: General

210108 - Technology Design and Applications

Grade Level: 9 - 12
Credits: 1-2
Description: This course will engage students in individual and/or team design activities in various technological contexts. Students will apply the technological problem solving process and develop critical thinking skills. These skills are applied in the researching, designing, prototyping, testing, and the modification of product(s). This can be accomplished through various laboratory instructional strategies utilizing the seven contexts of technological literacy. Instruction should be enriched through participation in Kentucky Technology Student Association challenges. This course may be 18 or 36 weeks in duration.
Content: Technology Education (CTE)
Population: General

210109 - Impact of Contemporary Technology

Grade Level: 9 - 12
Credits: 1-2
Description: This course addresses the positive and negative impacts of technology and the intended and unintended results of its implementation. Students investigate and analyze critical historical and emerging issues affecting the creation, development, use and control of contemporary and future technology. Laboratory activities will allow students to propose and implement alternative solutions. Students will measure, quantify, assess, and communicate the impacts of these proposals. This can be accomplished through various classroom and laboratory instructional strategies. Instruction should be enriched through participation in Kentucky Technology Student Association challenges. This course may be 18 or 36 weeks in duration.
Content: Technology Education (CTE)
Population: General

210110 - Conceptual Engineering Technology

Grade Level: 9 - 12
Credits: 1-2
Description: Engineering scope, content, and professional practices are presented through practical applications in this course. Students in engineering teams apply technology and Kentucky Core Content and skills to solve engineering design problems and innovate designs. Students research, develop, test, and analyze engineering designs using criteria such as design effectiveness, public safety, human factors and ethics. Instruction should be enriched through participation in Kentucky Technology Student Association challenges. This course may be 18 or 36 weeks in duration.
Content: Technology Education (CTE)
Population: General

210111 - Special Problems in Technology

Grade Level: 9 - 12
Credits: 1-4
Description: This independent-study course is designed to allow a high school student to study in-depth a technology topic or issue. The experience will enable the student to gain a more comprehensive knowledge of a particular technological context. A variety of instructional strategies using multiple resources, specialized laboratories, and collaboration with mentoring experts should be encouraged. Independent studies and/or internships could be utilized. Instruction should be enhanced through participation in Kentucky Technology Student Association challenges. This course may be 18 to 36 weeks in duration.
Content: Technology Education (CTE)
Population: General

210112 - Special Topics, Technology Education

Grade Level: 9 - 12
Credits: 1-4
Description: Special Technology Topics allows the teacher to develop a course for in-depth exploration of technological topics. This is a laboratory-based course designed to study a technological system or topic, and/or a recent technological advancement. This study should include how this advancement affects society and/or the environment. A culminating project integrating one or more of the seven contexts of technological literacy and the Kentucky Core Content is encouraged. It should include research, design, construction, analysis, writing, and presenting. Instruction should be enriched through participation in Kentucky Technology Student Association. This course may be 18 to 36 weeks in duration.
Content: Technology Education (CTE)
Population: General

210113 - Conceptual Engineering for Physical Science Credit

Grade Level: 9 - 12
Credits: 1
Description: The interdisciplinary nature of this student centered course requires that students know engineering in the fields of; mechanics, energy, and materials. Science content in the areas of motion and forces, interactions of matter and energy, atomic structure, and conservation of energy will also be addressed. These are the major science concepts from the Kentucky core content included in this course. In addition students should; investigate career opportunities in engineering fields, reflect upon historical and cultural perspective of science and engineering, develop a systematic problem solving approach, and refine their understanding of the interdependent nature of our technological and natural worlds.
Content: Introduction to Engineering For Physical Science Elective Credit
Population: General

210127 - Introduction to Technology , Grades 6-8

Grade Level: 6 - 8
Credits: 0
Description: Students develop an understanding of the progression and scope of the technological systems (Energy and Power, Information and Communication, Transportation, Manufacturing, Construction, Medical Agriculture and Bio Related Technologies) through exploratory experiences. Using tools, machines, materials, and processes students will engage in group and/or individual activities to gain knowledge and experiences with the design process. This can be accomplished through modular or other instructional strategies with participation in Kentucky Technology Student Association challenges. This course may be 6 to 18 weeks in duration.

Content: Technology Education (CTE)
Population: General

210128 - Introduction to Technology, Grade 9

Grade Level: 9 - 9
Credits: 1/2
Description: Students develop an understanding of the progression and scope of the technological systems (Energy and Power, Information and Communication, Transportation, Manufacturing, Construction, Medical Agriculture and Bio Related Technologies) through exploratory experiences. Using tools, machines, materials, and processes students will engage in group and/or individual activities to gain knowledge and experiences with the design process. This can be accomplished through modular or other instructional strategies with participation in Kentucky Technology Student Association challenges. This course may be 6 to 18 weeks in duration.
Content: Technology Education (CTE)
Population: General

Technology Education - Pre-Engineering
(219900)

Career Major - Pre-engineering is a four year sequence of courses which, when combined with traditional mathematics and science courses in high school, introduces students to the scope, rigor and discipline of engineering. Any course not found under this career major/sub code may be found in another career major/sub code with in this program area.

219901 - Principles of Engineering

Grade Level: 9 - 12
Credits: 1
Description: Students explore technology systems and engineering processes to find out how math, science, and technology help people.
Content: Pre-Engineering
Population: General

219902 - Introduction to Engineering Design

Grade Level: 9 - 12
Credits: 1
Description: Using computer modeling software, students learn the design process. They solve design problems as the develop, create, and analyze product models.
Content: Pre-Engineering
Population: General

219903 - Digital Electronics

Grade Level: 9 - 12
Credits: 1
Description: Students use computer simulations to learn about the logic of electronics as they design, test, and actually construct circuits and devices.
Content: Pre-Engineering
Population: General

219904 - Computer Integrated Manufacturing

Grade Level: 9 - 12
Credits: 1
Description: Students learn concepts of robotics and automated manufacturing by creating three-dimensional designs with modeling software and producing models of their designs.
Content: Pre-Engineering
Population: General

219905 - Civil Engineering and Architecture

Grade Level: 9 - 12
Credits: 1
Description: Teams of students collaborate on the development of community -based building projects and conceptual design for project presentations.
Content: Pre-Engineering
Population: General

219906 - Engineering Designs and Development

Grade Level: 9 - 12
Credits: 1
Description: Teams of students, guided by community mentors, work together to research, design, and construct solutions to engineering problems.
Content: Pre-Engineering
Population: General

219907 - Aerospace Engineering

Grade Level: 11 - 12
Credits: 1
Description: This course will introduce students to aerospace information systems, star sailing or astronautics rocketry, propulsion, and the physics of space science, space life sciences (BioSpace) that includes looking at habitat and crew systems with life support, and the biology of space science, principles of aeronautics, structures and materials, and systems engineering.
Content: Pre-Engineering
Population: General

219908 - Biotechnical Engineering

Grade Level: 11 - 12
Credits: 1
Description: This course includes experiences from the diverse fields of Bio-technology, Bio-engineering, Bio-medical engineering, and Bio-molecular engineering. Lessons engage students in engineering design problems that can be accomplished in a high school setting related to biomechanics, cardiovascular engineering, genetic engineering, agricultural biotechnology, tissue engineering, biomedical devices, human interface, bioprocess engineering, forensics, and bio-ethics.
Content: Pre-Engineering
Population: General

219917 - Special Topics, Pre-Engineering

Grade Level: 9 - 12
Credits: 1-4
Description: Special Technology Topics allows the teacher to develop a course for in-depth exploration of technological topics. This is a laboratory-based course designed to study a technological system or topic, and/or a recent technological advancement. This study should include how this advancement affects society and/or the environment. A culminating project integrating one or more of the seven contexts of technological literacy and the Kentucky Core Content is encouraged. It should include research, design, construction, analysis, writing,

and presenting. Instruction should be enriched through participation in Kentucky Technology Student Association. This course may be 18 to 36 weeks in duration.
Content: Pre-Engineering
Population: General

219999 - Gateway to Technology (Grades 6-8) (Project Lead the Way)

Grade Level: 6 - 8
Credits: 0
Description: This course is "activity oriented" to show students how technology is used in engineering to solve everyday problems. The four instructional units excite and motivate students to use their imaginations and teach them to be creative and innovative, while gaining the skills they need to develop, produce and use products and services.
Content: Pre-Engineering
Population: General